

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars:

In the specification

The specification has been amended to more clearly describe the air flow created by the blades of the inclined fan as being directed against side surfaces of the radiation fins, as is illustrated in Figs. 6, 9, and 14, providing literal antecedent basis for amendments in the claims. No new matter is added.

Rejection of claims 1-5 under 35 U.S.C. § 103(a)

Claims 1, 2, 4, and 5 presently stand rejected as being unpatentable over Chu (U.S. 5,835,347) in view of Wiley (U.S. 6,512,673), and claim 3 is rejected as being unpatentable over Chu and Wiley in view of Shen (U.S. 5,495,392). These rejections are respectfully traversed for the following reasons.

Claims 1 and 4 have been amended to more clearly define the present invention. Claims 1 and 4 have each been amended to clarify that the fan blades are inclined to direct an air flow against side surfaces of the radiation fins.

It is respectfully submitted that Chu, Wiley, and Shen, either individually or in combination, fail to disclose or suggest each and every element of independent claims 1 and 4 because none of the references discloses or suggests a fan that is inclined relative to the top of a radiator, and none of the references discloses or suggests an inclined fan creates an air flow directed against side surfaces of a plurality of radiator fins.

In each of the cited references, a fan is disposed on top of a radiator that is composed of a plurality of parallel, vertical fins. In each case, air flow create by the fan is directed in a direction alongside (or parallel to) the fins. Thus, none of the references show air flow being *directed against* the fins.

Claims 1 and 4 of the present application both require that the inclined fan creates an air flow ***directed against side surfaces*** of the radiation fins. Therefore, the cited references fail to disclose or suggest each and every element of claims 1 and 4.

In the recent Office Action, the examiner states that “Chu fails to teach [...] a frame having a triangular cross section, so that said blades are mounted in said frame at an inclined position relative to the top of said radiator.” The examiner refers to Wiley for this teaching.

It is respectfully submitted that Wiley fails to disclose 1) the fan/blades creating an airflow ***directed against side surfaces*** of radiation fins; 2) the fan blades being inclined ***relative to the top of the radiator***; and 3) a frame having a triangular cross section.

As noted above, all of the cited references show an air flow that is parallel to (or along side) the cooling fins, and not directed against side surfaces of the radiation fins. This can be clearly seen in Wiley’s Fig. 2, and can be further appreciated by noting the direction of incline of the fan atop the fins. Angled from front to back, the fan is oriented to direct air alongside (parallel to) the cooling fins within the channels between the fins. There is no teaching or suggestion that the airflow is directed ***against the side surfaces*** of the fins.

It is respectfully submitted, referring to Wiley’s Figs. 1 and 2, that Wiley discloses a generally conventional fan housing or frame that is square or rectangular in cross section. While the examiner refers to Fig. 4, item 10 to support his position, it is respectfully submitted that this figure lacks sufficient detail to support such a position, especially in view of Figs. 1 and 2 which show details of the fan and fins which are lacking in Fig. 4.

Referring again to Wiley’s Fig. 2, it can be seen that the radiator fins that underlie the fan are themselves inclined (the tops of the fins can be seen to slope from front to back in the illustrated view). Thus, the fan blades are not inclined ***relative to the top of the radiator***, since the top of the radiator itself (defined by the fins) is inclined.

Both Chu and Shen disclose a fan disposed on top of a plurality of parallel, vertical fins, with no inclination of the fan whatsoever. In each case, air flow create by the fan is directed in a direction alongside (or parallel to) the fins. Thus, neither Chu nor Shen discloses or suggests an inclined fan that creates an air flow *directed against side surfaces* of radiation fins.

It can be recognized that, by directing the airflow to impinge against the side surfaces of the radiation fins, the present invention provides an improvement in cooling efficiency.

It is respectfully submitted that, for at least these reasons, neither Chu, nor Wiley, nor Shen, nor any combination thereof, teach or suggest each and every element set forth in claims 1 and 4, and that therefore claims 1 and 4, and their respective dependent claims 2, 3, and 5, are allowable over the cited references. Accordingly, withdrawal of the rejection is respectfully requested.

Conclusion

In view of the amendments to the claims, and in further view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is requested that claims 1-5 be allowed and the application be passed to issue.


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Examiner: Samuel E. Belt
Art Unit: 3746

If any issues remain that may be resolved by a telephone or facsimile communication with the Applicant's attorney, the Examiner is invited to contact the undersigned at the numbers shown.

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Respectfully submitted,


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